C
M-25 '20

AMERICAN DYESTUFF REPORTER

Vol. VI, No. 12

March 22, 1920

IN THIS ISSUE

American Dye Costs
Some of the Interesting Facts Revealed by Tariff Commission's Ten Months' Investigation.

Fastness to Rubbing and Perspiration

A Clear Statement

The Unkapped Climax

Published weekly by Howes Publishing Co., Woolworth Bldg., New York, N. Y. Domestic subscriptions $3.00;
[illegible] Entered as second-class matter Nov. 6, 1919, at the

FAST VAT DYES

MADE BY

THE SOCIETY OF CHEMICAL INDUSTRY IN BASLE, SWITZERLAND

Sold in American during the whole period of the war by

A. Klipstein & Company
NEW YORK

and obtainable now in rapidly increasing quantities.

THESE DYES ARE FASTER THAN INDIGO

They are sold under the registered trade-marks of
"CIBA" AND "CIBANONE" DYES

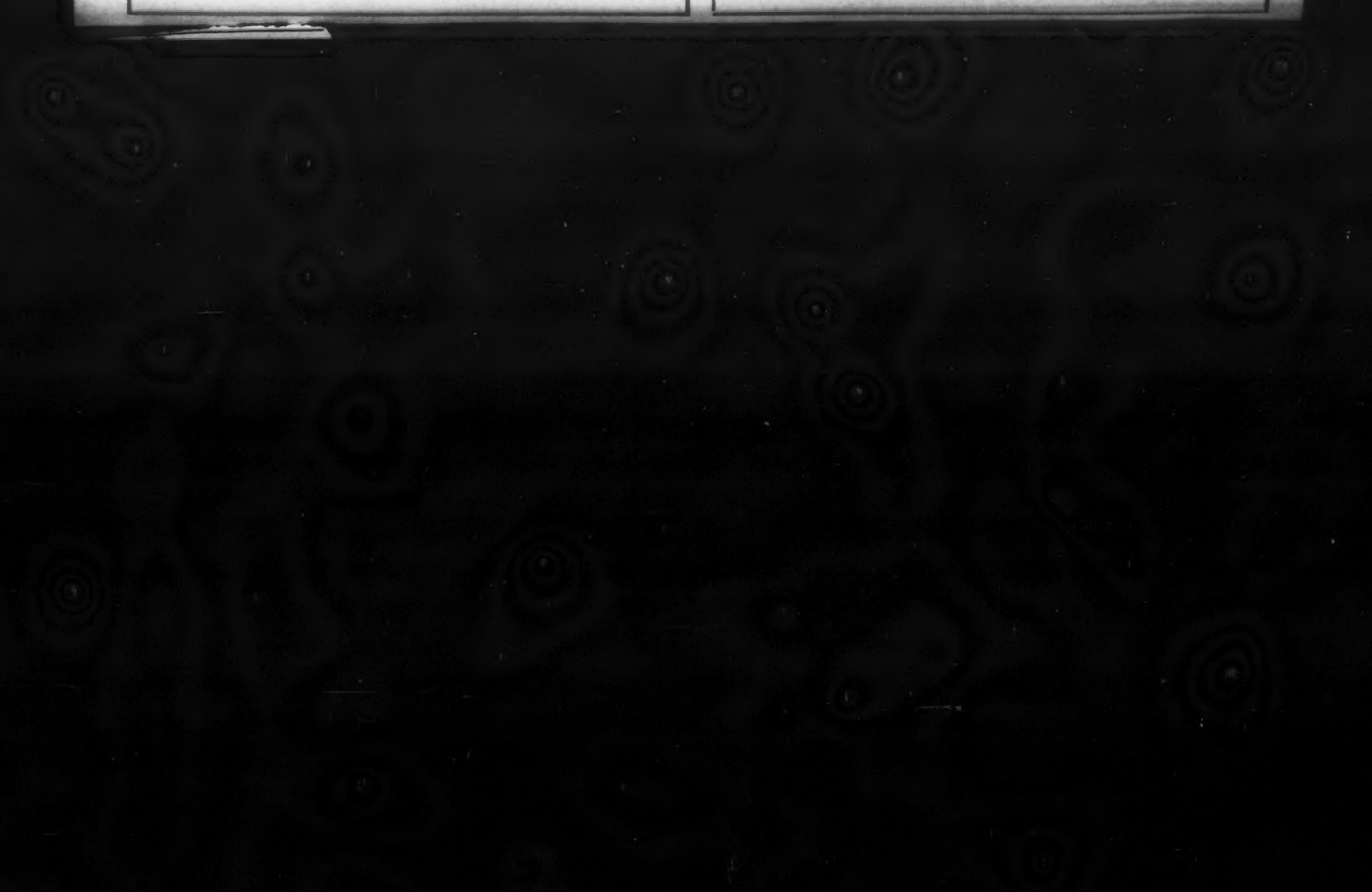
and include every necessary shade of color—for example—
"CIBA" Blue, Violet, Red, Scarlet, and Bordeaux
"CIBANONE" Green, Yellow, Orange

The Textile Trade of America need not suffer for the lack of

FAST VAT DYES

Quotations and Samples on application

A. KLIPSTEIN & COMPANY
644-652 GREENWICH STREET, NEW YORK CITY



American Dyewood Co.

. . . Manufacturers of . . .

Dyewood Extracts
Chipped *and* Ground Dyewoods

Importers of

Aniline Colors *and* Indigo

NEW YORK PHILADELPHIA BOSTON HAMILTON, ONT.

Works: CHESTER, PA.

Commonwealth Color & Chemical Co.

MAIN OFFICE:

Nevins, Butler and Baltic Streets
Brooklyn, N. Y,

Cable Address: Biederwitt, N. Y.

Codes Used: A-B-C, 4th & 5th editions; Liebers

Manufacturers of Aniline Colors
Dyestuffs and Chemical Specialties

DIRECT COLORS
BASIC COLORS
ALIZARINE COLORS
ACID COLORS
SULPHUR COLORS
OIL SOLUBLE COLORS

For Silk, Cotton, Unions, Felt Hats, Vegetable Fibres, Wood Stains, Varnishes, Shoe Polish.

Dextrines, Lace Gums, Silk Sizing, Varnish, Paint and Printing Ink Dryers.

All Colors, Soluble Oils and Fat Liquors for Leather.

Samples, prices and information on request

Special Export Prices

Correspondence in all languages

"COAL TO DYESTUFF"

NEWPORT COLORS

"COAL TO DYESTUFF"

From this time forward, whenever Newport colors are advertised, there will appear the slogan, "Coal to Dyestuff."

This is not an idle phrase—on the contrary it bears a message of the utmost importance to every dyestuff consumer the world over. In three words it epitomizes the following pregnant facts:

1. The Newport organization owns its own coal mines.
2. It mines its own coal.
3. It makes its own coke from its own coal in its own by-product ovens.
4. It distills its own crudes from its own coal tar.
5. It develops its own intermediates from its own crudes.
6. It manufactures its own dyestuffs and colors from its own intermediates.

In sum, the "Newport" is the *only manufacturer* of dyestuffs in America which *owns and controls every step* in production from the time the coal leaves the mine till the finished product is shipped.

This happy condition means to us a uniform and assured supply of raw materials, and a single great organization to handle every manufacturing process. To consumers it means that we have no one with whom to divide responsibility—that we must stand squarely behind every Newport product. Is it any wonder that *Newport Dyestuffs are Standard?*

When you see our slogan, remember what it means:

"COAL TO DYESTUFF"—NEWPORT ALL THE WAY

Newport Chemical Works, Inc.
Delaware Corporation

Passaic, New Jersey

BRANCH SALES OFFICES

BOSTON, MASS. PHILADELPHIA, PA.
PROVIDENCE, R. I. CHICAGO, ILL.
GREENSBORO, N. C.

AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs are Used"

Vol. 6 New York, March 22, 1920 No. 12

AMERICAN DYE COSTS

Some of the Interesting Facts Revealed by Tariff Commission's Ten Months' Investigation

THAT the American dyestuff manufacturers need not be afraid to lay their cases fairly and squarely before the Senate in their plea for protective measures as soon as possible; that the cost of labor plays a small part in determining the cost of producing dyes, even as dye prices play a most insignificant part in determining the cost of clothing; that the present prices of American-made dyes are from two to five times higher than the pre-war prices of dyes and intermediates laid down in this country by Germany; and that the reparations prices, with the mark valued at par (practically the price at which the German syndicate offered dyes through Dr. Herty), are in most cases a little higher than the prices of the same dyes in this country at the present time—these are four interesting bits of information to be gleaned from the United States Tariff Commission's new report, entitled "Costs of Production in the Dye Industry, 1918 and 1919."

This report, which is No. 15 of the Commission's Tariff Information Series, has been eagerly awaited ever since it was decided in May, 1919, to make an investigation of this subject at a meeting of Commission members and the accounting representatives of the important dye manufacturers of the country. At that time it was determined that statements of costs should be submitted for the last half of 1918 and the first quarter of 1919. This information was received by the Commission, but after it was analyzed and tabulated it was found that the data did not cover a sufficiently long period of time to show the cost tendencies in the industry. Accordingly it was decided to obtain also the cost reports for the second and third quarters of 1919, so that the pamphlet now contains tables based on data covering a period from July, 1918, to September, 1919, inclusive.

The report is divided into two parts. The first presents a study of the cost of production of a selected list of dyes and intermediates in dollars per pound; the costs in 1919 in relation to the 1918 figures; an analysis of costs for the periods; variations of costs by companies for the third quarter of 1919; details of overhead expenses for the third quarter of 1919, and miscellaneous special charges for the third quarter of 1919.

In the second part a comparison of domestic costs in the third quarter of 1919 with the prices of dyes and intermediates in various markets at different periods is given. Statistical tables in the second part consist of a comparison of costs with pre-war and present processes of dyes and intermediates, and relative prices of a selected list of dyes compared with pre-war prices.

The selected list of dyes treated of comprises Benzo Blue 2B, Bismarck Brown, Chrysoidine, Direct Black, Indigo, Magenta, Malachite Green, Methylene Blue, Methyl Violet, Naphthylamine Black, Nigrosine (finished), Orange II and Sulphur Black.

In presenting the figures of cost, however, the Tariff Commission points out that the averages submitted do not represent the condition of the industry in as accurate a manner as the average costs usually represent industries that are long established and that have well-tested and standardized methods both of production and of cost accounting.

The fundamental idea upon which the tables are based is that the cost records as kept by the reporting companies shall be accepted as the accounting facts in the case without revision by the Commission. It is true some uniformity in the reports has been introduced by the methods of tabulation, but in the main the averages were compiled from figures actually found to be upon the books of records as kept by the various companies.

Peculiarities of various items of expense are pointed out in the detailed discussion of the tables.

There are two kinds of difficulties in the dye industry which render conclusions based upon average cost figures of doubtful value.

The first is that the manufacturing methods in the industry are not well organized and are not reduced to a normal routine. To a considerable extent the production in the past has proceeded almost regardless of cost. As with most of the war industries, the question of quantity output and prompt deliveries was of primary importance, and attention was diverted from the nicer adjustments that characterize routine operations. In many cases the management of particular plants thought it wiser to build full-sized productive units upon the chance that they would be successful in operation rather than to go through a long process of building small "semiplants," or "pilot" plants as they are sometimes called, where the engineering and chemical problems are worked out before quantity production is attempted. In many cases, also, the haste with which operations were carried on led to abnormal costs through low yields from the material consumed, or through the spoiling of valuable products by inexperienced or careless operators. Not only has this lack of organization of the productive processes led to great discrepancies in the cost between different firms, but it also has led to great variations in the cost for a given product at different periods for the same plant. Many of the tendencies toward lower cost of production due to a greater output have been hidden, therefore, by fortuitous circumstances connected with the productive processes.

The second difficulty that renders average costs unreliable is the fact that uniform methods of accounting have not been applied in the industry. This is especially true with respect to the distribution of overhead expenses to the various products. Because of the large capital investment

necessary in the dye industry the overhead charges are relatively large as compared with the direct labor cost. Therefore differences in the method of distributing them have a great influence upon the apparent cost of particular products.

Without going into the details of the various methods of distribution of expenses we may mention the following that are in use:

(a) Distribution upon the basis of the direct labor. That is to say, if all the overhead expenses for the dye factory are, say, 50 per cent of the total direct labor cost, a given product which has labor cost of $1 should have an overhead charge of 50 cents.

(b) Distribution based upon the cost of the raw material used in a given product as compared with the total raw material used in the plant.

(c) Distribution based upon the direct superintendence chargeable to a particular product.

(d) Distribution upon the basis of the relative sales value of the products.

(e) Still another method in use, and one that seems to be particularly well suited to the dye industry, is a distribution upon the basis of capital investment in the various productive divisions of the plant. That is to say, if a given product or class of related products requires a capital investment of 10 per cent of the whole value of assets this product or class should bear 10 per cent of the overhead burden.

No attempt will be made here to explain these various methods of distribution, nor was any attempt made to reconcile the differences in cost growing out of them in tabulating the reports as received. It is probable that some uniform method could have been applied, but because of the great diversity in the manufacturing and accounting methods of the various firms any scheme of distribution applicable to all reports would have been crude and arbitrary and likely to involve more errors than it corrected.

Another class of cost that is especially irregular upon the reports of the various companies is that of selling expenses, and they have been excluded from the report except in the case of one company where it was impossible to separate them from administrative charges.

In view of the unstandardized and varying methods of production and of accounting in this industry the Tariff Commission must strongly emphasize the uncertainty of conclusions drawn from the cost figures in this report, and the possibility of error in administrative action based upon such data. The figures are, however, the most trustworthy and the most significant that can be immediately procured under present conditions in the industry, and in any discussion of the cost of production the tables given must be accepted as the nearest approach to accuracy now possible.

In Table I, for example, the average costs of such well-established products as Sulphur Black, Nigrosine and Direct Black are found to be increasing in recent periods; and from this one might conclude that lower costs are not to be expected from quantity production, whereas, as a matter of fact, the higher average is due to very high costs for one or two companies whose yields were low on account of various accidental circumstances. Furthermore, in Table II-a the costs for different producers are seen to vary by a large percentage from the average cost for all companies. In almost every case these variations are explainable by some accidental circumstance, which in the long run probably will be eliminated but which now affects the whole trend of cost to such an extent that conclusions based upon average figures are likely to be erroneous.

Another minor source of error is shown in Table IV, in which the charges for special items, such as depreciation, interest and administrative expenses, are given. The charges for these items on the books of the

reporting companies were accepted as the facts in the case and no attempt has been made in this report to introduce uniformity with respect to them. The purpose in showing them in a separate table is to indicate their influence upon the total unit cost for the industry as a whole.

In Tables V-a and V-b are compared domestic costs for the third quarter of 1919, with price quotations for various times and places. One point brought out by this table is that present American costs are from two to five times higher than pre-war German prices, but that they are slightly lower than present German prices as fixed by the reparation scale.

It should not be concluded from this latter statement, however, that the American producers can compete with foreign manufacturers in all parts of the industry, because in some classes of products such as vat and alizarine colors, which are not shown in these tables but which are of fundamental importance to a well-rounded industry, the foreign producers yet have a competitive advantage born of long practice in complicated productive processes.

Amanil Colors for Cotton
Union Colors for Mixed Goods
Amacid Colors for Dress Goods

FOR MEN'S WEAR

Amacid Chrome Colors
Alizarine Navy Blue
Alizarine Chrome Red
Alizarine Yellow
Alizarine Brown

Basic Colors

American Aniline Products, Inc.
80 FIFTH AVENUE, NEW YORK
Works: Nyack, N. Y.
Offices: Boston, Mass.
Philadelphia, Pa.
Danville, Va.
Chicago, Ill.

FASTNESS TO RUBBING AND PERSPIRATION

Fastness to rubbing is of some importance for most dyed fabrics, but especially for those which go into use for clothing and upholstery. Fastness to perspiration is also important for these goods, and the combined action of rubbing and perspiration in actual wear may prove a most severe trial. The following paragraphs from an article by M. Fort, in *The Textile Manufacturer*, gives an interesting discussion of tests, color properties and dyeing methods bearing on these subjects.

Fastness to rubbing is often impaired by faulty or unsuitable dyeing methods, but it may also be regarded largely as a special property of particular dyes. In either case it is within the dyer's power to depreciate or improve fastness to rubbing by his choice of dyes and methods of application. For example, in dyeing indigo navy on wool it is possible to obtain every degree of behavior from a fairly fast shade to one so poor that not even subsequent milling or heavy scouring will render it satisfactory in a rubbing test. The chrome blues which are used in competition with indigo for navy, when reasonably well dyed, are excellent to rubbing, and the utmost skill and care are required to produce an indigo navy anything like so good in this respect.

The ordinary rubbing test is quite empirical, and leaves much to be desired. The dyed fabric is rubbed on unsized white calico, both cloths being dry. The writer, however, has observed the importance of relatively small amounts of moisture in rubbing tests. Shades of basic dyes on cotton when newly dried yield much more favorable results than after standing twenty-four hours to gain condition, and the rubbing test becomes increas-

ingly more severe with perceptible dampness. In all cases where fastness to rubbing under varying conditions of wear is important, a test with damp or wet material should supplement the ordinary one. Again, the finish or routine of treatment, subsequent to dyeing, may increase or diminish fastness to rubbing in certain cases. It is hardly necessary to say that treatment which removes loose dye, such as scouring and milling, often results in an improvement in this respect. The shades produced by garment dyers are usually inferior to those obtained in ordinary dyeing as regards rubbing, not only because of the limitations imposed on the actual dyeing, but also because of the absence of favorable finishing treatment.

Direct Dyes on Cotton

On cotton the direct dyes are among the fastest to rubbing. Dyed with ordinary care from baths containing soda ash, they usually yield satisfactory shades. The addition of soap or soluble oil, such as turkey-red oil, to the bath helps to produce the fastest results to rubbing. On the other hand, too much salt—especially as in old standing baths—low dyeing temperature, strong dyebaths, and few runs or short dyeing, and last, but not least, ineffective rinsing, all tend to diminish the fastness of the shades of rubbing. On every class of material the preliminary scouring, boiling, or cleansing, has more or less effect upon the fastness to rubbing of the shades produced. Naturally, other things being equal, heavy or dark shades are most likely to show up badly in a rubbing test, while the degree of damp in the materials has considerable influence with dyes liable to stain off on white cotton. On wool and silk also the direct cotton dyes are good to rubbing, and the garment dyer is greatly indebted to them for obtaining his best results to rubbing.

As regards fastness to perspiration, they vary according to the nature of the dye and the perspiration, particularly its acidity, which may affect the shade of a few of the more sensitive reds and yellows. Ammoniacal or alkaline perspiration—e. g., that of horses—has usually a tendency to increase the bleeding and staining effect. The effect of urine, while stronger, is not unlike that of alkaline perspiration. Putrefaction must be reckoned with, as it is accompanied by a reducing effect which causes a change in the shade of some dyes due to actual chemical reduction. The ordinary test, carried out by immersing the dyed samples in a warm dilute solution of acetic acid to which common salt is added, fails to reproduce many of the effects of actual perspiration.

Basic Dyes

The basic dyes on the whole yield shades of inferior fastness to rubbing on any fiber, and all available skill in

(*Continued on page* 12.)

United Chemical Products Corporation

Importers, Exporters and Manufacturers

YORK AND COLGATE STREETS, JERSEY CITY, N. J.

ANILINE COLORS
Acid, Direct, Basic
Chrome and Sulphur

UCPC

SUMAC EXTRACT
Logwood, Hematine,
Gambier, Fustic, Etc.

CHEMICALS
Soluble Oils, Soaps, Softeners, Sizes, Gums and Finishes

INQUIRIES SOLICITED

AMERICAN DYESTUFF REPORTER
Published weekly by
HOWES PUBLISHING COMPANY
Woolworth Bldg., New York Tel. Barclay 7558

Pointed solely toward the welfare and growth of the American Dyestuff Industry. Unbiased contributions appreciated.

A. P. HOWES, President
LAURANCE T. CLARK, Editor

Domestic Subscription, $3 per year. Foreign, $4. Advertising rates on request.

A CLEAR STATEMENT

Much pleasure and encouragement can be derived by American manufacturers and consumers of dyestuffs from a letter received by this publication from Senator Miles Poindexter in which he declares:

"I am heartily in favor of the dyestuff tariff bill, and expect to support it. There was, however, a plan to discriminate against certain Western industries covered by several bills pending in the committee, and I objected to this discrimination, as I believe the protective tariff principle to be one in which all who have industries coming within the terms and conditions of the principles to be applied should share alike."

We print this passage because it serves as an additional reminder to some of those who were misled by New York newspaper reports of the Senate dye discussion of February 25, and whose impression that Senator Poindexter spoke against the measure still persists.

The principle upon which the gentleman from Washington based his position with regard to consideration of the bill on that day is a sound one, and that he acted sincerely in demanding explanations from the Finance Committee is plainly shown by his straight-from-the-shoulder statement given above.

Since the attitude of Senators King and Thomas, and the absence of Senator Sherman, would have prevented a vote on the bill regardless of other considerations, the most unfortunate feature of the discussion was the fact that supporters of the bill allowed to go unchallenged statements that any time will do to pass it as long as the War Trade Board continues to function, or as long after that body's automatic demise as the industry is protected by special temporary action similar to the Penrose resolution. As has repeatedly been pointed out in these columns, this is a false doctrine because it is the very uncertainty as to the ultimate outcome which has caused the dye makers to refrain from throwing their full resources into projected exploits which will require months for their consummation. Hence, while taking full cognizance of the fact that there are more important matters than the dye bill to be disposed of, there is no escaping the conclusion that holders of this view are wanting in information, if not in logic or concern for the future.

Senator Poindexter is not of those and will, because of his brilliancy in debate and tenacity of purpose, prove a powerful asset to the dye forces when the measure again shall be taken up.

THE UNKAPPED CLIMAX

It required but a matter of five days for the comic opera counter-revolution which the world has been amusedly watching o'er the Rhine to be counted out of existence. Had a Napoleon stood in the shoes of Dr. Wolfgang Kapp, Germany might now be on the way to order and—and almost anything you please, just so long as you make it something decisive; but under the circumstances which actually existed the result was never in doubt. A collapse was, fortunately, inevitable.

Outside of Germany the incident means little or nothing. It has merely been interesting as a spectacle. We see Dr. Kapp and von Luettwitz —who played the Dr. Watson of the piece—entering Berlin by the front door at the head of the stern Baltic forces, and we see Imperial President Friedrich Ebert and Minister of Defense Gustave Noske scuttling out

the back door. We see Dictator Kapp occupying the chancellor's palace and grandly issuing orders for the arrest of Refugee Ebert, who has managed to set the burglar alarm and telephone orders for a general strike on his way through the hall. We see Statesman Kapp speaking feelingly of his love for the common peepul, with one ear cocked inquiringly toward the railways and the printing presses, now strangely silent, and we see Fugitive Ebert dancing derisively about in the offing and refusing to play in Coalitionist Kapp's yard. Lastly we see Former General Provisional Director Kapp packing hastily and speeding away in a gray motor car amid a drenching rain which drips unceasingly from leaden skies, leaving behind, as a matter of political expediency only, a weeping woman—his daughter—whose vision of gracious power has vanished.

And as a minor but illuminating incident we see the stern Baltic legions drawn up at attention in the Wilhelmstrasse and, unable to stand the "kidding" of the populace while awaiting the word to depart, opening fire upon a crowd of unarmed men and women who rush into the Adlon Hotel in a frantic effort to escape the fusillade of bullets. Again we see them as they pass the Brandenburg Gate, turning to discharge machine guns at the crowd, which has regathered to jeer them once more. Is it not eloquent of what poor stuff these creatures, fancying themselves conquerors, are made?

The entire tragi-comedy may be viewed as a half-hearted attempt on the part of those educated muckers, the Junkers, to seize the reins of power from the Bauer government, which now is popularly supposed to have them back again. But where have they ever been since the abdication of Wilhelm but in the hands of the more industrious class of German people? We have been favored with

H. A. METZ & CO., Inc.

122 Hudson Street, New York

Offers a complete line of

DYESTUFFS
COLORS
INTERMEDIATES
SIZING AND
FINISHING
MATERIALS

Manufactured by CONSOLIDATED COLOR & CHEMICAL CO., Newark, N. J.

Manufactured by CENTRAL DYESTUFF & CHEMICAL CO., Newark, N. J.

BRANCH OFFICES:

BOSTON PHILADELPHIA CHARLOTTE
CHICAGO SAN FRANCISCO PROVIDENCE

a most clear-cut example of the efficacy of the general strike, by virtue of which—and nothing else—Ebert is again executive, and by virtue of which the extremists now agitating for Soviet government may be checked.

We have witnessed a vain attempt by the "old gang" to bring affairs in Germany to a favorable climax, and have enjoyed hugely watching the progress of a five days' wonder—the wonder being that it lasted five days.

FASTNESS TO RUBBING AND PERSPIRATION

(*Continued from page* 9.)

dyeing is required to counteract this tendency. They are perhaps at their best on silk dyed from soap baths, or acidified baths, and possibly the natural smoothness and gloss of the silk also assist in preventing the shades from rubbing. On wool an acidified dyebath, slow dyeing, and good rinsing, yield the most favorable results if the wool has been well scoured. Bronziness of shade, which is readily obtained with basic dyes, is accompanied by the worst rubbing properties. Acids—e. g., acetic acid—greatly assist the solubility of basic dyes, and will restrain the dyeing to almost any extent according to the amount present in the bath. This restraint is a valuable aid to good penetration, and so to better rubbing properties. The control of temperature in favor of slow, even dyeing likewise acts favorably.

On cotton, defective fastness to rubbing of shades produced with basic dyes is a well-known objectionable feature. One of the best of them is Methylene Blue, but shades of this dye are by no means equal to those of good direct cotton colors to rubbing. The problem of how to render basic dyes as good as direct dyes has not been properly solved yet. It may be noted at the outset that padding and mordanting methods on cotton are often liable to yield shades which rub. For example, besides basic dyes, logwood and aniline blacks, paranitraniline red, turkey and alizarine reds, and other less important dyed shades which involve impregnation followed by squeezing at some stage of production, are liable to be defective in fastness to rubbing unless all available skill is used in dyeing. The greatest practical efficiency obtained by squeezing at some stage of production, are liable to be defective in fastness to rubbing unless all available skill is used in dyeing. The greatest practical efficiency obtained by squeezing rollers, centrifugators, etc., while it may serve to gain apparent evenness on the fabric, fails to do for the individual fibers what a real dyeing affinity performs. It is, nevertheless, possible to obtain results to rubbing which leave little to be desired by processes involving padding. Thus the same tannin mordant which yields poor fastness when dyed with basic dyes, may, when converted into a yellow shade of titanium tannate, yield good results to rubbing.

Soaping and Rinsing

After fixing a tannin mordant with tartar emetic or other metallic salt, the subsequent rinsing should be made as thorough as possible to obtain the best rubbing properties with basic dyes. If a soaping is given as well as a rinsing before dyeing, a still greater improvement can be gained. It has also been proposed to treat tannin-mordanted cotton to a bath of silicate of soda neutralized with muriatic acid. Basic dyes applied on this mordant yield shades of improved fastness to rubbing.

The writer found that the kind of metal in the salts used for fixing tannin affects the fastness of the subsequent dyed shade to rubbing. Tin salts give poor results, antimony better, and aluminum and titanium the best result of all. Back-tanning is useless for improving fastness to rubbing, although it is used to improve fastness in other respects. While there is scope for further improvement in shades of basic dyes on tannin-mordanted cotton, it must be recognized that the defect is largely rooted in this class of dyes, and accompanies their use in any dyeing

process more or less. Certain acid dyes derived from basic dyes carry on this defect of the parent colors—e. g., Soluble Blues and some of the Acid Violets. There are exceptions among them, however, for Acid Magenta is of good fastness to rubbing, while basic Magenta is of poor fastness. Shades dyed with basic dyes tend to stain off and bleed in acid solutions, and do not therefore withstand the action of acid perspiration so well as acid dyes or direct cotton dyes.

The combined effect of rubbing and perspiration is a severe trial to most shades of basic dyes. Methylene Blue excels other members of the class. Alkaline perspiration, while not so bad for causing bleeding and staining, will more or less fade certain basic dyes—e. g., Magenta, on wool or silk—by its decolorizing action. A careful treatment with weak acid will revive the shade, however, if fading is due to this cause.

The fastness of acid dyes to rubbing is usually good, when well dyed and properly rinsed. The use of an acid bath improves the fastness to rubbing of shades on wool, and garment dyers can often obtain better results with acid baths even where neutral baths are permissible. Greasy wool is particularly liable to reduce the fastness to rubbing of the shades dyed on it, and no matter what class of dye is used, good preliminary scouring is essential to obtain the best results. Where wool is required to be dyed in the grease, there is nothing for it but to choose the best dyes, and acid dyes or after-chrome mordant dyes are most likely to yield fair results to rubbing.

Applied to cotton by padding, acid dyes naturally fail to behave well to rubbing tests, being in fact merely dried on. Their use in this way is small. The behavior of acid dyes on wool towards alkaline perspiration varies, but in many cases some degree of bleeding and staining is shown. The best acid dyes, however, such as the milling colors, are equal to withstanding the test. It has been proposed to after-treat certain acid blacks with copper sulphate in the exhausted dyebath, after dyeing with acetic acid for improved fastness to perspiration; also certain shades on wool can be improved by a formalin treatment, but neither method has found extensive use. The kind of acid used and the amount present in the dyebath affect the period occupied before staining and bleeding reaches a maximum, and what appears to be a first-rate fastness in a test of a few hours may degenerate to considerable bleeding in a few days or weeks, according to how long it takes for the protective effect of the acid to disappear, as it is removed by alkaline perspiration or a succession of soakings. This and the effect of neutral salts in assisting bleeding were observed by the writer, who found that in the cold acid dyes bleed more into salt solutions than into water. Perspiration always contains considerable amounts of common salt, whether accompanied by acidity or not.

Short Tests Misleading

Another of the writer's experiments shows how misleading impressions may result from short tests. Strips of dyed wool, obtained by application of an acid scarlet from the usual sulphuric bath, were immersed in cold water, which was changed twice a day. During two days practically no bleeding occurred, but afterwards it commenced, and increased to a maximum in about a week, after which it diminished again. The same dye on wool, applied from a neutral

Bosson & Lane

Manufacturers

Castor Oil Products
Alizarine Assistant
Turkey Red Oil
Oleine Oil
Soluble Oil
Monoline Oil
Castor Soap Oil

Works and Office, Atlantic, Mass.

bath, in a similar test bled most on the first day, and afterwards gradually bled less and less, although palpable bleeding continued even after six weeks.

Ordinary laboratory tests to imitate the action of water, perspiration, street mud, sea water, and urine give at most merely a negative assurance as to the fastness of shades, and real positive assurance can be gained only by prolonged and severe trials. A good perspiration test may be made under a stoker's shirt, supplemented by another under a cart-horse's saddle. If an artificial concoction to imitate ordinary perspiration is wanted—and it has a limited value—then the usual mixture of dilute acetic acid and common salt applied warm over a long enough period will imitate some effects of human perspiration, but not all.

The mordant dyes on animal fibers are usually good to rubbing when, and only when, mordanting and dyeing have both been properly performed, with good washing or rinsing between. Slow, well-penetrated, level treatment in both mordanting and dyeing avoids the production of loose superficial shades which rub. If dyeing is done first, practically complete exhaustion should be secured before adding chrome for after-chroming, or the shades will rub. If dye and mordant are both present from the start, combination in the bath must still be avoided. They should be dissolved separately and only mixed cold. The bath may also be set with ammonia at the start, and in any case acid should not be added until the later stages of the dyeing.

Ammonium sulphate is preferable to acid, and may be added at the start. Shades of mordant dyes on cotton gain in fastness to rubbing by the use of clean and effective impregnation and squeezing, by treatment to remove loose mordants after fixing (especially good washing after the dunging bath), by slow and effective combination of dye with mordant in dyeing, and effective steaming and clearing with soap at the finish. Mordant dyes are among the most resistant to perspiration.

Sulphide dyes on the whole are remarkably good to both rubbing and perspiration. A shortage of sulphide or soda ash in the dyebath, ineffective squeezing or wringing and poor rinsing, make trouble when it could be avoided. As in most other cases, soaping after dyeing gives an extra improvement to rubbing, but after-chroming is of little use for this particular purpose.

The vat dyes, especially of the indanthrene class, can be dyed to yield shades of great fastness to rubbing, and perspiration rarely affects them in that case. Indigo is one of the most difficult to dye to a high standard of rubbing fastness. A sharp dye vat—viz., one in brisk fermentation or containing plenty of hydrosulphite—is the main requirement, while shades which air up quickly are least likely to possess good fastness to rubbing. Good squeezing or wringing also exerts a favorable effect, and a distinct importance attaches to a subsequent scouring of indigo on wool. Rinsing with a weak hydrosul-

Butterworth-Judson Corporation

61 Broadway, New York

Plants:
Newark, N.J. Lyndhurst, N.J. Baltimore, Md.
Medford, Mass.

Auramine O

The Solubility of This Product Is Equal, and in a Great Many Cases Superior, to Pre-War Types

Newark Chrome Black PV

A Color of Unexcelled Fastness to Fulling and Potting

Newark Chrome Black FF

A Color of Excellent Fastness to Fulling and Light. Suitable for Raw Stock, Yarn and Piece Dyeing

phite, solvents and other additions to the scouring liquors, and various special aids to the removal of loose dye, have been tried to gain greater fastness to rubbing, with varying success. The quantities of hydrosulphite and caustic soda, as stated by the dye-maker, for use with vat dyes are liable to be too low if fastness to rubbing is specially aimed at. The use of soluble oil or soap in the vat also helps to provide the best results, and the final boiling with soap should be thoroughly effective.

In highly specialized dyeing operations, such as for turkey-red and aniline black, every care is taken to combat the tendency to obtain shades more or less defective towards rubbing.

What has already been stated of mordant dyes on cotton indicates the lines on which special care is taken in the dyeing of turkey-red. The single-bath aniline black, as frequently applied to yarn, is incurably poor to rubbing, although heavy soaping and suitable sizing will do a great deal towards improving it. The aged black is better to rubbing. Good padding and squeezing, a padding mixture in which the active ingredients do not react until after impregnation, slow aging, efficient chroming and soaping—these are all favorable to obtaining the best results. Fastness to perspiration is amply sufficient with these dyes, apart from assistant rubbing.

Paranitraniline red tends to rub in many cases, and, while the tendency is inherent, it can be diminished to small proportions. The grounding or preparing with naphthol should be done on well-bottomed material. Turkey-red oil in the prepare is advantageous. Good squeezing or wringing before drying, and an active effective diazo bath, are important, as is also the final soaping or alkaline clearing treatment. If chemicking is done to brighten the red and bleach the fiber, it reacts favorably on rubbing also. Fastness to perspiration alone is good.—*Textile World Journal.*

SPACES FOR EXHIBITS IN BRUSSELS TRADE FAIR AVAILABLE TO-DAY

The annual Commercial Fair of Brussels, Belgium, which is to be held on April 4-21, will be the first large commercial exhibition in Belgium since the war.

All natural products or manufactures may be exhibited, with the exception of explosives and products of enemy nations. Samples, models, or pictures instead of the actual articles may be shown. Exhibitors will be required to state the origin of their wares, and may be required to produce a certificate. The delivery of exhibited articles to purchasers during the continuation of the Fair is strictly prohibited, but participants may register orders.

Possession of stalls may be obtained after March 15. The management of the Fair will take charge of and pay for the transportation of exhibits between the Tour-et-Taxis Station, Brussels, and the Fair grounds, but special application must be made for this. The management will take reasonable care of all exhibits, but declines responsibility in case of theft or damage. Information will be furnished on application regarding the insurance of goods against these risks. Space for the storage of empty packing cases will be provided at a small rental. All participants must remove their exhibits by April 30 at

ESSEX ANILINE WORKS, Inc.
Manufacturers of Aniline Colors
88 BROAD STREET, BOSTON, MASS.
Works at South Middleton, Mass. New York Office, 150 Nassau Street

latest, failing which they will be removed by the Fair committee.

The American Express Company has been appointed "Official Forwarding Agents and Travel Representatives in the United States," for the Fair, and will be glad to supply full information regarding it, including application blanks for admission of exhibits, as well as information regarding the company's services in connection with the Fair. Listing in the catalog to be published by the committee may also be arranged through the company. Inquiries should be addressed to the Foreign Trade Department.

GERMAN DYE SUPPLIES

Lord Moulton on the Question

Lord Moulton, chairman of British Dyestuffs Corporation, Ltd., addressing the color consumers at Manchester recently, recalled the address which he gave to color users in Manchester in December, 1914, when he urged the formation of a great dye industry, which must be a national one, because it could not possibly stand up against the old and powerful dye industries of Germany unless it was too big to be crushed and too national to be bribed. The danger against which he warned them had proved to be so great that the very existence of our own country turned upon its avoidance. The factories which we had to build to supply the demands of the war were now disappearing, because they were made purely for war purposes, whereas the Germans, in their enlarged chemical factories, in the swollen establishments of all their dye firms, had a wealth remaining which, although created for war, was still serviceable in peace.

The great German dye industry, supported by the Government very largely during the war, had accumulated large stocks. England had been starved of them, except so far as her own efforts had been able to create industries to make dyes under the difficult conditions of war-time.

The first purpose of the clause which he had had inserted in the Peace Treaty was to ensure that the world would not be at the mercy of Germany. The clause provided that 50 per cent of the German stocks should be taken by way of reparation, at a price which was to be settled by the Allies and credited to the reparation fund. The second part of the clause was intended to protect us in the future. Forty years of growth, assistance from the German Government, and our own negligence and that of other nations in chemical industries, had left Germany in a position to produce special dyes to an extent far greater than any other nation could cope with.

BRITISH COTTON MILLS PROSPER

According to an analysis of the reports of Lancashire cotton spinning companies for the twelve months ended November 30, 1919, prepared by F. W. Tattersall, of Manchester, record profits were made. A table of 100 companies, with a share capital of £4,723,475 ($23,986,790 at normal exchange), shows an average dividend paid for the period under review of 21.34 per cent, the amount distributed being £1,007,989 ($4,905,375). These 100 mills contain

9,182,418 spindles. During the year the directors of twenty-six of these firms have increased the amount paid up on shares by the payment of bonus out of profit. Since April there has been an increasing trade in yarn, and the margin of profit has steadily widened.

ATLANTIC SAMPLE BOOK RECEIVED

Acknowledgment is herewith made of the receipt from the Atlantic Dyestuff Company, Burrage, Mass., of the company's new sample book devoted to Atlantic Blacks. This is being placed in the hands of that branch of the American textile industry which is interested in the use of Sulphur Blacks, and explains in detail the application of these colors as manufactured by the Atlantic Dyestuff Company. Notice of this new book will be given next week.

REVIVAL OF FRENCH TEXTILE INDUSTRY

In 1914 Lille district had 342 textile mills, of which 98 were devoted to wool, 55 to cotton, 74 to flax, 38 to dyeing and finishing, and 77 to various purposes. At the present time 235 of these mills have restarted, and are employing 46,000 hands as against 125,000 before the war. The wool industry, almost entirely centered at Roubaix-Tourcoing, was the first to recover, as it could most easily procure materials. It is expected that these mills will soon be able to employ half the pre-war staff, as wool has been bought in England and landed at Dunkirk and Havre, and will be conveyed to the factories by special train. The same applies to the cotton mills, of which 31 are already active.

PRAISE BE TO ALLAH!—BAGDAD WANTS U. S. DYES

Prior to the war large quantities of chemical products, principally dyes, were supplied by Germany to Bagdad through a local German firm. Since the beginning of hostilities in Europe, however, no imports of this class have been received, but the enormous stock on hand was quite sufficient to meet the requirements of the country for several years. The chemicals supplied by Germany were adapted to the needs of the country, and it is reported that orders are now being placed by local merchants with their pre-war sources. If competitive prices, as well as facilities in shipment and terms, were offered, American firms might expect a large amount of business.

[A list of banks, pharmacies, and dealers in dyeing materials and chemicals, Bagdad, Mesopotamia, can be obtained from the Bureau of Foreign and Domestic Commerce or its district and co-operative offices by referring to file No. 2199a.]

Approximately $100,000 will be the cost of a dye plant to be erected at Wilmington, Cal., according to present plans of the California Barium & Chemical Company.

KUTTROFF, PICKHARDT & CO.
(INCORPORATED)
128 Duane Street New York City
Boston 86 Federal Street
Chicago 305 W. Randolph St.
Providence 52 Exchange Place
Philadelphia 111 Arch Street
COAL-TAR DYES *and* COLORS
Extracts of Logwood, Fustic, Hypernic, Indigo—Hematine
"Heald's" Quercitron Bark Extract—For Wool and for Cotton
HYDROSULPHITE Concentrated Powder—BLANKIT—DECROLINE

NOTES OF THE TRADE

Under the laws of New York, Fach & Co. have been incorporated with a capital of $11,000 to deal in textiles. The incorporators are A. C. Fach and A. and S. Klener.

Extensive plans for expansion are rapidly being put into effect by the Cronkhite Company, of Boston, Mass., dealers in chemicals, oils, dyestuffs, soaps and other textile specialties. The capital of the company was recently increased to $200,000, while new departments are being added and the sales staff increased. Albert Marcher, formerly of the Katzenbach & Bullock Company, has been appointed manager of the chemical department, with D. S. Sullivan as his assistant. The latter was in charge of the chemical department of J. A. & W. Bird Company, which department was purchased by the Cronkhite Company.

R. T. Grant has been appointed Southern manager for the United Chemical Products Corporation, with offices in the Realty Building, Charlotte, N. C. B. R. Dabbs has been appointed to act as representative of the company in Georgia, Alabama, Tennessee, Louisiana and Mississippi.

The Standard Color Works, Inc., 55 Liberty Street, New York, has filed notice with the Secretary of State of an increase in its capital to $100,000, to provide for general business expansion.

Announcement has been made by the Calco Chemical Co., Bound Brook, N. J., of the closing of its dye plant at Burlington, N. J. The equipment at the works is now being dismantled and will be shipped to the company's central plant at Bound Brook. Ernest B. Taylor, superintendent of the Burlington plant, has been appointed assistant superintendent of the company's department of intermediates at Bound Brook.

The Texdel Chemical Company, New York, has been incorporated with a capital of $25,000 to manufacture chemicals and kindred specialties. W. Eisman, J. M. Marshall and C. Neur, 1153 East Ninety-second Street, Brooklyn, are the incorporators.

Plans are well under way for the amalgamation of two of the largest chemical companies in Great Britain—Brunner Mond & Co., and the Castner Kellner Alkali Company—the two being already closely connected through the exchange of shades early in 1916. At the date of the last report the capital of the first-named company was $48,665,000, but it has since been increased. The Castner Kellner Company's subscribed capital is $4,866,500. The profits of the two companies during the year 1918-19 were $4,935,292 and $922,3[illegible], respectively.

"Blues — Their Origin, Manufacture and Uses" was the subject of an address made by O. F. Frick, of the Ultramarine Company, Huntington, W. Va., before a meeting of the Louisville Paint Superintendents' Club on March 17. The gathering was held in the Tyler Hotel, Huntington.

With a capital of $100,000 the Union Products Company has been incorporated under the laws of Delaware to carry on business as chemists. The incorporators consist of Leon Wise, Israel Leever and J. S. M. Schulman, of Reading, Pa.

Announcement has been made by the General Chemical Company of declaration of the regular quarterly dividend of 1½ per cent on preferred stock. This dividend will be payable April 1 to stockholders of record March 18.

R. Lechner Co., *Inc.*

Specialists in Dyestuffs, Dyewood Extracts, Etc.

110 East 23rd Street New York

1920

Tay-
ington
t su-
part-
rook.

New
cap-
nemi-
Eise-
1158
oklyn,

r the
rgest
ain—
astaer
o be-
rough
1916.
apital
$48,-
eased.
sub-
profits
e year
2,822,

nufac-
ect of
ck, of
nting-
of the
dents'
nering
Hunt-

0 the
s been
Dela-
chem-
ist of
. S. M.

ade by
any of
arterly
eferred
e pay-
record

AMERICAN MADE

DYESTUFFS and INTERMEDIATES

Diethylaniline
Napthionic Acid
Neville Winther Acid
R. Salt
Schaeffer Salt
Bayer Salt
Broenner Acid

ANILINE DYES & CHEMICALS, *Inc.*

Cedar and Washington Streets, New York City

BOSTON CHICAGO PHILADELPHIA COLUMBUS, GA.

CONSULT US

About Your Dyeing Problems

The services and advice of an expert chemist and a well equipped laboratory are at your disposal without cost, except when special research or experimentation is necessary, when the charges will be of a minimum nature.

AMERICAN DYESTUFF REPORTER

Woolworth Bldg., New York City

"Peace Hath Her Victories No Less Renowned Than War"

When the outbreak of the war in 1914 brought our manufacturers face to face with a realization of what the absence of a dyestuff industry in this country meant to them, the

NATIONAL ANILINE & CHEMICAL COMPANY, Inc.

was the only organization able to increase rapidly its productive facilities and save the situation for American mills.

National Colors Kept Our War Looms Working
National Colors Keep Our Peace Looms Working

Main Office 21 Burling Slip, New York